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EDITORS.

## Original.

### MICROSCOPICAL OBSERVATIONS IN YELLOW FEVER.

BY J. B. MARVIN, M. D.,\*

*Professor of Chemistry and Microscopy, Hospital Medical  
College; President of Microscopical Society, etc.*

The literature of yellow fever is very voluminous, but our knowledge of the pathological anatomy of the disease is very meager. I believe by calling to our aid chemistry and the microscope most valuable additions will be made to our knowledge of the disease. While resident physician at the Louisville Yellow Fever Hospital I improved my opportunity by making frequent and extended chemical and microscopical examinations. I present you to-night a brief summary of my work as far as I have finished. I present you bare facts, illustrating my remarks with mounted specimens. I offer no theories or deductions from my work, believing that our knowledge of this disease will be best advanced by a careful and conscientious record of facts instead of vagaries and theoretical hypotheses.

*The Breath.*—Pure glycerine was smeared in the center of a clean new glass slide, and held an inch or two from the nostrils or mouth of the patient. After a few minutes' exposure to the breath the slide was examined under the microscope. Large quantities of very active vibrios were revealed; they were of the short, dotted variety.

There were also found roundish, oval, moving bodies, probably bacteria.

*The Blood.*—A drop of blood from the finger was received on a slide covered with thin glass, avoiding pressure, and examined. The corpuscles were more or less jagged and crenated. In some severe cases there was a large increase in the number of white corpuscles. Scattered among the corpuscles were small oval and rod-shaped bodies, yellowish in color, and quite active in their movements. They were probably bacteria, but do not resemble vibrios or any form of bacteria that I am familiar with. More extended observations in this and other fevers must be made before attaching undue importance to the existence of these bodies in the blood and breath. The question naturally suggests itself whether these bodies are the cause or the result of this disease. I incline to the belief that they are the result. Every precaution was taken, in making these examinations of the breath and blood, to avoid contamination. The examinations were made with a Folles one-tenth inch immersion objective and a "B" ocular.

*The Urine.*—The points of interest in the urine were the constant presence of granular tube-casts, renal epithelium, and granular matter, all more or less stained yellow with bile; the tube-casts in severe cases appearing as soon as the second day, more generally on the third or fourth day of the attack. In all cases there was an admixture of vesical epithelium. In some few cases there was a great abundance of vesical epithelium for a few days before the appearance of tube-casts or renal derivatives. The quantity of tube-casts may be small or very large. The severer the case, the greater the quan-

\* Read before the Louisville Microscopical Society, October 17, 1878.

tity of casts. Tube-casts are very valuable guides in the prognosis of the disease. As convalescence sets in, the casts generally disappear. In some cases, however, they continue in considerable quantity till after the patient is up and walking about.

*The Vomit.*—After the stomach had been emptied of food the vomit was glairy mucus and epithelium streaked with blood, bearing a striking resemblance to the sputum of pneumonia. Bile in greater or less quantity was generally present. Frequently pure blood was vomited in large quantities, the ejection of blood frequently alternating and following black vomit. The coffee-ground or black vomit consists of blood more or less digested and broken down by the gastric juice and bile. There were large quantities of vibrios, an oval, not recognized growth, and frequently very large crystals of hæmatoidin.

*The Liver.*—The principal pathological changes are found in the liver. The color may be bright yellow, orange, nutmeg, or normal. The organ is generally enlarged, the enlargement being very slight in some cases. It is very firm and tough. On section the hepatic cells are granular, frequently stained with bile, and have undergone almost complete fatty degeneration. There is generally an increase of the connective tissue and a consequent pressure upon and destruction of the cells. In one case, aged twenty-seven, not a drinker, who had suffered at intervals for two years with malarial fever, there was an enormous increase of the connective tissue visible to the eye, giving to the organ the appearance found in cirrhosis. On section all the appearances of cirrhosis were found, with marked fatty degeneration in parts, and in other places amyloid degeneration.

*The Kidneys.*—The kidneys are congested and in some cases considerably enlarged. On section there are found tubal and intertubal hemorrhages. The tubes are filled with granular matter and epithelium; in some parts the tubes are empty and completely denuded of epithelium. There is frequently

fatty degeneration, slight in degree. In short, the kidneys present all the appearances of Bright's disease.

*The Spleen.*—The spleen presents no constant or marked deviation from health. In some cases, which gave history of previous malarial trouble, the organ was enlarged and pigmented. In other cases there was no enlargement or pigmentation.

*The Stomach.*—This organ does not appear congested as stated in text-books. The mucous membrane is pale, and is not destroyed. In only one case was there any thickening of the membrane or enlargement of the rugæ. On section, the glands and villi are but slightly changed. The villi, especially their free extremities, contain blood. I am convinced that the changes stated to have been found in this organ are really post-mortem changes, due to the fact that examinations were not made until some hours after death. Post-mortem changes are very rapid, and the sooner an examination is made the better.

*The Intestines.*—The intestines generally present the same appearance as the stomach. In some cases there is marked congestion, and the villi present appearance of acute catarrh.

*The Bladder.*—In those cases where there is suppression of the urine for any length of time before death, the bladder is badly congested, the mucous membrane being purple in spots. In other cases there is no marked change. The gall bladder is full of bile, frequently greatly distended and badly congested.

*The Lungs.*—This organ presents no constant change. In several cases there was recent pleuritic adhesion; in one case there was severe pneumonia. In some cases the organ is completely collapsed. The color is generally dark and mottled; hemorrhagic spots are frequent.

*The Heart.*—The heart may be full or empty. In some cases there is marked fatty degeneration, the walls being pale and friable. Most generally the organ is normal. The pericardium always contains more or

less reddish fluid, the amount varying from one to six ounces.

*The Brain.*—No lesions were found in the cerebrum, nor constant change at the base of the organ. In cases which had marked delirium, there was marked congestion and softening at the base. I have not finished my microscopic examination of this organ.

LOUISVILLE. \_\_\_\_\_

### INFLAMMATION OF MASTOID CELLS.

BY W. CHEATHAM, M. D.

We are all no doubt aware of the fact that it is a very serious matter to have inflammation of the mucous membrane of the middle ear extend to that of the mastoid cells. Cases are reported almost daily of such a complication, and frequently of its resulting in the loss of the life of the patient.

Since my return home I have seen two cases, one resulting seriously. It was in the person of a child about two and a half years of age. When I first saw it there was a very free discharge of pus from the external auditory canal, with great swelling of the walls; excoriation in and around the ear by the acrid, bad-smelling pus. A day or two afterward the canal was completely closed.

I advised scarification, leeches, and hot water, with politzerization. By this means the swelling was greatly reduced, also the pain lessened and rest given. Aside from internal medication, consisting of bromide potassium and quinine, I advised the continued use of hot water by means of the douche, and inflation.

The little fellow did nicely for several days. Upon visiting him one afternoon I found him rather drowsy, with a drooping of the lower lid and facial paralysis of that side. Treatment continued. Trephining of mastoid advised, but would not be submitted to by parents. I will say here that the patient's throat was not diseased in the least.

Two or three days after the facial paral-

ysis occurred there was great difficulty in swallowing, fluids regurgitating or flowing into larynx, producing strangulation. The next day hemiplegia of left side followed. There had been no tenderness or swelling of the mastoid; still I advised trephining, as I have seen cases without the above-mentioned symptoms with pus in the mastoid cells and a great deal of caries of the bone. Leeches, cleanliness, hot water, and poultices over mastoid region were all continued, with no relief. Three days after the occurrence of the hemiplegia the little fellow died. It was impossible to get a post-mortem.

I have not the least doubt but what the inflammation extended to the mastoid cells, involving the brain through some of the numerous foramina which transmit the minute branches of the middle meningeal, or by direct ulceration of the thin plate of bone intervening between the middle ear and dura mater, setting up a meningitis with cerebral abscess, resulting in death.

The next case is one of peculiar interest, as I think it one of primary inflammation of the mastoid cells. There was neither before, during, nor after the existence of the mastoid-cell disease any inflammation of the middle ear. It originated primarily in the cells themselves.

The patient is a young man, twenty-eight years old; temperate habits, health good, no syphilitic history. I saw him about two weeks after his trouble began. Condition then was as follows: Tissue over mastoid bone greatly swollen, shiny, tense, and very sensitive to pressure; auricle standing out straight from the head; hearing normal; no tinnitus; drum membrane normal in appearance; drum cavity easily inflated by either Politzer's or Valsalva's method; great pain over that side of the head. Does not know any cause for the trouble.

That night I made a free incision, an inch and a quarter in length, down to the bone; knife grated against rough bone; no sinus found leading into cells. I introduced cotton tent, and ordered poultices to be kept

up constantly, the poultices to be applied over the mastoid region only; ordered to be taken internally bromide potassa. That night patient slept well, not having had a good night's rest for nearly a week. Two days afterward there was a pretty free discharge of pus; found sinus leading into the cells admitting Bowman probe No. 6. The only additional treatment advised was probing and squeezing of cells through sinus.

In three weeks the incision had almost closed, auricle had receded to proper position, pain entirely relieved, swelling disappeared, and patient was able to go to work.

In the transactions of the American Otological Society of 1874 there is an article published, written by an aurist of great repute, where he says *mastoid inflammation is never primary*. This I can but call a case of primary lesion of mastoid cells. The mastoid bones of different subjects, or even of the same subject, differ so in their construction that I think there can be no difficulty in such a thing occurring. Some of these bones are thick, some thin; some almost solid, with no cells; some with external openings, others with none. Why might there not be some with no communication between the middle ear and the cells where there are so many points of difference? And surely the mucous membrane lining these cells is capable of taking on an inflammation.

In the early treatment of mastoid-cell disease we can generally hope to master the trouble by means of leeches and hot fomentations. If, however, an external periostitis has set in, we should immediately make a free incision down to the bone. If pus is found, evacuate it; if not, the bleeding and relaxation of the swelled tissues relieve the pain and assist in causing the swelling to subside. Where there is caries or the least suspicion of pus in the cells, unless an opening exists, immediate trephining is justifiable.

In closing this paper I think it well to give the conditions given in that excellent work on diseases of the ear, by Roosa, un-

der which the mastoid may be properly operated upon:

1. The integument and periosteum should be freely divided over the mastoid in all cases in which there is pain, tenderness, and swelling in the part.

2. Such an incision should also be made whenever severe pain referred to the middle ear exists, and is not relieved by the usual means; that is, leeches, warm water, etc.

3. An explorative incision should be made when we have good reasons to suspect caries and retained pus in this part.

4. The mastoid bone should be perforated after such an incision whenever the bone is found diseased, or a small fistulous opening should be enlarged. It should also be perforated whenever we have good reason to believe that there is pus in the middle ear or mastoid cells, which can not find an exit by the external auditory canal.

5. The mastoid should be perforated in a case of suppuration of long standing with frequent and painful exacerbations.

We see from this that the great object of treatment in mastoid inflammation is then the fulfillment of the well-recognized law of surgery, to give free exit to the pus.

LOUISVILLE.

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## Correspondence.

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### THE COMMUNICABILITY OF FEVERS.

To the Editors of the Louisville Medical News:

The opportunity now presented of investigating all questions connected with yellow fever, and the evident determination to use that opportunity to the utmost advantage would seem to make it not impertinent to offer any suggestion possible bearing on the subject.

Observation extending over a long period, but never with adequate means of verification, led me to the opinion—not a conviction—that all or nearly all febrile diseases, in proportion to their virulence, are communicable from the persons or clothes of the sick by infection of the atmosphere, to per-

sons exposed to that atmosphere, who, from other causes, fall below a certain point of vital resistance. If persons exposed to this infected atmosphere are otherwise healthy the infection will not of itself produce disease. But if from other causes the system is brought down below the point of resistance, if the person is made sick by exhaustion, by the influence of malaria, by fear, or by any other means, then the sickness will assume the type peculiar to the surrounding infection.

If this opinion is true it helps to explain some of those anomalies over which different schools in the profession are now contending.

The few cases of yellow fever, or at least of simulated yellow fever, that have occurred in Louisville outside of the class of refugees, seem to furnish some evidence in support of this opinion. The cases have occurred in a limited area, described as intensely malarial, where every summer and autumn there is a great deal of malarial fever. This section of the city adjoins the Nashville depot, and many of the inhabitants are employed in work in or about the depot. It is said that the first person stricken down was one of the night clerks at the depot. This person was, of course, exposed to the most intense form of the surrounding malaria, and when he succumbed to that, here was the peculiar infection from the persons, clothes, and possibly bedding, of the yellow fever patients from the South, to give specific character to the disease.

As far as we have heard, the conductors and others engaged in the transportation of these patients and the refugees on the cars have not taken yellow fever. The infection to which they were exposed did not hurt them.

Again, we had an early account of the exceptionably horrible condition of Grenada, owing to the obstruction of a sewer, a condition which must inevitably have produced severe and general miasmatic disease. Yellow fever had broken out in New Orleans, and we may at least suppose that a spark from that place fired this magazine. The result was a

fever more malignant, appalling, and destructive than had ever been known before in the South, and compared with which the same disease in New Orleans was mild. Does not the history of the disease in Memphis furnish an approach to the foregoing?

Again, yellow fever has only begun to spread in the country places in the South since the advance of autumn has brought that annual miasmatic state of the atmosphere which always produces at that season fevers more or less malignant. Now the yellow fever that has been prevailing for two months in the neighboring city gives its specific type to the malarial fever.

Again, the physicians, nurses, clergymen, and friends who have been attending yellow fever cases in the comparatively healthful atmosphere of Louisville, and intelligently observing the ordinary laws of hygiene, have contracted no disease. And the same thing is true of the same classes in the infected cities. These persons not only carefully obeying the ordinary laws of health, but made strong by a high moral purpose, encountered the sickening atmosphere in its deadliest form. But the yellow fever did not hurt them until they were worn down by fatigue, loss of rest, and nervous exhaustion. Then, if stricken down, it is invariably with yellow fever. We know that the same classes in all other parts of the country are subjects of the same exhaustion, but they do not take yellow fever.

I do not touch the question of the *origin* of yellow fever. It may be, I suppose it is, the product of malaria in its most intense degree under the favoring conditions of long continued heat and moisture. But the facts above referred to do seem to bear somewhat upon the question of the progress and propagation of this disease. They also tend to show that strict attention to all sanitary laws, and especially the destruction, as far as possible, of the known sources of miasm, if they do not entirely prevent the recurrence of this pestilence, will at least save the country from its destructive malignancy.

It will be for the MEDICAL NEWS to say whether these suggestions are of value enough to be submitted to the consideration of the profession, and of the various boards of investigation that have been or may be appointed.

JAMES CRAIK.\*

LOUISVILLE.

## Miscellany.

### ABSTRACT OF SANITARY REPORTS RECEIVED DURING THE PAST WEEK UNDER THE NATIONAL QUARANTINE ACT:

OFFICE SURGEON-GENERAL, U. S. M. H. S., }  
WASHINGTON, October 19, 1878. }

**New Orleans.** During the week ended yesterday afternoon there were nine hundred and seventy-six cases of *yellow fever* and two hundred and thirty-five deaths, of which eighty-nine cases and thirty-six deaths occurred in the last twenty-four hours reported. Total cases, twelve thousand one hundred and eighty-two; deaths, three thousand six hundred and thirty-five.

No cases of *yellow fever* at Port Eads or Southwest Pass during the past week.

**Morgan City, La.** There were sixteen deaths from *yellow fever* during the last week. The number of cases was incorrectly given for last report. Number cases to date reported to be about four hundred and thirty-two; total deaths, eighty-seven.

**Mobile, Ala.** For the week ended yesterday noon there were fifty-six cases of *yellow fever* and twelve deaths. Total number of cases, ninety-three; deaths, thirty-two.

**Decatur, Ala.** Seventy-three cases *yellow fever* and twelve deaths during the week ended yesterday. Total cases, one hundred and fifty-five; deaths, twenty-seven.

**Ocean Springs, Miss.** During the week ended yesterday noon there were twenty-five cases of *yellow fever* and one death. Total cases, one hundred and twenty-eight; deaths, twenty-nine.

**Pass Christian, Miss.** There were thirty-two new cases *yellow fever* and four deaths for the week ended yesterday. Total cases, one hundred and twenty-six; deaths, thirteen.

**Bay St. Louis, Miss.** During the week ended yesterday evening there were fifty-two cases of *yellow fever* and twelve deaths. Total cases, three hundred and thirty-eight; deaths, sixty-eight. The fever is decreasing for want of material. The cases occurring now are more malignant.

**Friar's Point, Miss.** Eight cases *yellow fever* and two deaths during week ended yesterday evening. Total cases, twenty-one; deaths, six.

**Crystal Springs, Miss.** The *yellow fever* is confined principally to the country around Dry Grove and Lebanon Church. No case has yet occurred within the limits of the village of Crystal Springs. During the past week there were thirty-one cases and eight deaths. Total number cases, one hundred and twelve; deaths, forty-four.

**Baton Rouge, La.** During the week ended yesterday at nine A.M. there were three hundred and one cases of *yellow fever* and sixteen deaths. Total cases, twenty-one hundred and seventy; deaths, one hundred and twenty-nine.

**Pascagoula, Miss.** Total cases of *yellow fever* at quarantine to October 12th, five; deaths, two.

**Scranton, Miss.** Total cases *yellow fever* to October 12th, five; deaths, three.

**Vicksburg, Miss.** For the past week there were thirty-two deaths from *yellow fever* in the city and sixty-four in Warren County outside of the city. Total deaths in city and county, ten hundred and seventy-four.

**Holly Springs, Miss.** Total number cases of *yellow fever* to yesterday evening, eleven hundred and seventeen; deaths, two hundred and eighty-five. About two hundred cases are under treatment. The fever is spreading into the surrounding country. A slight frost occurred in the night of October 16th.

**Grenada, Miss.** For the week ended yesterday evening there were four new cases

\*The author of this communication is a graduate in medicine as well as a minister. Dr. Craik's father was General Washington's family physician, and was with him in his last illness.—Eds. News.

of *yellow fever* and two deaths. The fever is spreading into the country. In fourteen families, containing ninety-seven unacclimated persons, there occurred forty-one cases and two deaths during the past week. Total deaths in Grenada and the adjacent country, three hundred and twenty-seven.

*Bolton, Miss.* Total cases of *yellow fever* to yesterday evening, one hundred and seventeen; deaths, thirty-one. The first case occurred August 12th.

*Hernando, Miss.* During the week ended yesterday evening there were fifty cases of *yellow fever* and twenty-three deaths; several of the cases from one to three miles in the country. Total cases, one hundred and thirty-three; deaths, fifty-six. A light frost was observed this morning.

*Memphis, Tenn.* For the week ended the evening of 17th inst. there were one hundred and eight deaths from *yellow fever*. Total deaths, twenty-eight hundred and ninety-two. Dr. Thornton, in charge of the Marine Hospital Service at Memphis, has the fever.

*Chattanooga, Tenn.* One hundred and one new cases of *yellow fever* and thirty deaths for the week ended at four o'clock P. M. yesterday.

*Paris, Tenn.* No cases of *yellow fever* or deaths for the week ended yesterday afternoon. A frost has occurred, and no further trouble is expected.

*Milan, Tenn.* First case of *yellow fever* (a refugee) occurred August 26th; first case among the inhabitants, October 12th. Total cases to yesterday, three; deaths, three.

*Cairo, Ills.* No report of cases or deaths received. Assistant Surgeon Roswell Waldo, of the Marine Hospital Service, died of the fever at his post yesterday.

*St. Louis, Mo.* Four deaths from *yellow fever* at quarantine during the past week.

*Louisville, Ky.* For the week ended yesterday there were fifteen new cases of *yellow fever* and five deaths. Of these numbers, fourteen cases and five deaths were among inhabitants in the locality before described. Total cases, one hundred and twenty-seven;

deaths, fifty-four; of which eighty-nine cases and thirty-four deaths were among refugees.

*Key West, Fla.* No new cases of *yellow fever* during the week. One death occurred the 12th instant. Total cases, thirty-seven; deaths, seventeen.

No reports received from the following places, where *yellow fever* exists: Plaquemine, La.; Port Gibson, Miss.; Mississippi City, Miss.; Greenville, Miss.; Spring Hill, Miss.; Water Valley, Miss.; Biloxi, Miss.; Canton, Miss.; Brownsville, Tenn.; Grand Junction, Tenn.; Hickman, Ky.; Gallipolis, Ohio.

*Havana, Cuba.* Twenty-four deaths from *yellow fever* and one from *small-pox* for the week ended October 12th. The deaths from all causes for the months of April, May, and June last were three thousand and thirty; an increase of nine hundred and eighty-nine deaths over the total for the same months of 1877. Of this increase, five hundred and thirty-five were from *small-pox*, ninety-eight from *yellow fever*, and one hundred and thirty from *diarrhea*. The deaths from *yellow fever* the past summer are recapitulated as follows: April, twenty-eight; May, fifty-three; June, one hundred and eighty-four; July, five hundred and four; August, three hundred and seventy-four; and September (to the 28th), one hundred and sixty-eight; making a total of thirteen hundred and eleven deaths.

*Matanzas, Cuba.* Official returns of the Board of Health for the months of June, July, August, and September show that during that period there were two hundred and seventy-nine cases *yellow fever*, with ninety-one deaths. Cases are now rare, and the fever has almost ceased.

*Morocco, Africa.* Advices from Tangier up to September 21st report the prevalence of *cholera*, *small-pox*, and *malignant fevers* throughout the empire, except in the country fronting the Spanish coast. *Small-pox* prevails in every port, except Tangier and Teteran. The deaths from *cholera* at Casablanca, a port of five thousand inhabitants, were upon the increase, and numbered one

hundred and three on the 17th September. Hundreds have died in the interior from *cholera*, *fevers*, and *starvation*, especially in the middle and southern provinces.

JOHN M. WOODWORTH,  
*Surgeon-general U. S. Marine Hospital Service.*

LINDSAY & BLAKISTON.—We have received from this well-known publishing-house their Physician's Visiting List for 1879. This invaluable publication is so well known that it requires no further commendation or comment. We would simply say to any physician who may be without a physician's visiting list, get one. Accompanying the List is Lindsay & Blakiston's revised and classified catalogues of their medical, dental, chemical, and pharmaceutical preparations.

AMERICAN MEDICAL SCHOOLS.—Professor Pepper, in *Am. Jour. Med. Sciences*: There are now sixty-five medical schools in the United States, besides those devoted to homeopathy, eclectic, and botanic systems, etc. During the winter of 1876-77, these sixty-five schools had seventy-one hundred and forty-one students, of whom twenty-three hundred and thirteen graduated as doctors of medicine in the spring of 1877. There were employed in these schools five hundred and fifteen professors, and two hundred and seventy-nine other teachers with various titles. In five of these schools there is a graded course of three years, and in two a preliminary examination is required, although of low grade. Of the remaining schools *about fifteen are doing fairly good work, work as good as there is a demand for, and are prepared to improve as rapidly as public opinion and financial necessities will permit. The rest of the schools are doing poor work, and will probably continue to do it. Many of them owe their existence to the desire of two or three gentlemen to advertise themselves without coming under the ban of the code of ethics. What an individual may not do, is yet permissible to a corporation. The profit from such schools does not come from the fees of the student,*

but from the advertisement, and from the consultation cases which the graduates bring to the professors. They can well afford, therefore, to accept low tuition fees, or even to teach without fees. It is useless to discuss methods of improvement for this class of schools; the only useful reform is one that will put an end to their existence.

QUARANTINE.—London Lancet: The Local Government Board have during the past week issued a circular order to all port sanitary authorities in England and Wales calling their attention to the extensive epidemic now raging in America, and urging the immediate provision of hospital accommodation, means of isolation, and generally the completion of preparations that will enable them to co-operate with the customs in preventing a definite importation of the disease. The authorities at Rio de Janeiro have recently issued a revised code of regulations respecting their own port, which will mitigate in several important respects the inconvenience and miseries formerly experienced by those who had the misfortune to arrive when yellow fever, or, indeed, any other contagious or infectious disease, was epidemic at other ports. The working hours of the crew are limited to from five to ten in the morning and from four to six in the evening, so that the scorching heat and the dangerous dews are thereby avoided, and the presence of an officer in each lighter sent to the custom-house with goods is dispensed with. These are great boons, and will be appreciated very fully by all concerned.

The Egyptian government has recently issued a new code of regulations that will affect the pilgrim-carrying trade considerably. One of these indicates that all ships coming from Morocco or any of the ports of Northern Africa will be forbidden to enter any Egyptian port, irrespective of any conditions of the bill of health. But the pilgrims may be transhipped provided the steamer receiving them guarantees to leave the port twenty-four hours after they are on board, and provided also that the tranship-

ment does not exceed three days. This is considered for Egypt as a great concession, for the Egyptian government is, in all matters relating to quarantine, most despotic, and has not at present in these matters taken any foreigners into its counsels.

**MEDICAL ADVERTISING IN CHICAGO.**—New York Medical Record: The profession in Chicago are much exercised concerning the threatened discipline of certain prominent medical advertisers, whose certificate of a certain oculist is published in the local papers. There is certainly something ridiculous in the defense which the parties set up, and the show of injured innocence which they maintain as to any wrong which they have committed. We can scarcely imagine, however, a more flagrant offense against the spirit of the code than the signatures of these gentlemen, with their full hospital and college titles. The wrong-doing turns upon the advertisement of these professors as medical practitioners, and the unnecessary parade of their medical qualifications as distinguished certificate writers. We are not informed that the objectionable testimonials have been withdrawn, but if not, the Medical Society of Chicago owe it to their professional brethren to see that such is done, and establish a precedent similar to that which now governs certificate writing for the daily papers in New York.

**SALT WATER IN SURGERY.**—Lond. Lancet: Common salt has been perhaps somewhat neglected by medical practitioners. So at least thought some members of the French Association when, at its recent meeting, a paper was read by M. Houzé de L'Aulnoit, of Lille, upon the employment of solutions of this domestic article in the treatment of abscesses and empyemata. In the latter class of cases he thought such solutions of especial value in washing out the pleura, on account of the salt water being of higher density than pus, and yet not injurious to the tissues. By its use as an injection the pus could be all evacuated in cases where

other injections failed. He described sun-dry cases where its employment met with good results, but the report we quote from (*Progrès Médical*) does not enter into details. He has also used it in the treatment of wounds, and stated that its application is not very painful, being less so than alcohol and water. In the discussion that followed M. Potain said he had successfully treated a case of suppurating hydatid of the liver by this means; but he thought that if salt was so much neglected at the present day, it was because its virtues had been too much lauded in olden times. In answer to M. Azam, who asked whether the salt acted as a disinfectant, or was only of value on account of the density of its solution, the author of the paper said that the action of salt was multiple, it having an effect not only on the wall of the suppurating cavity, but also on the blood. Saturated solutions should be used if the effect of their density was wanted, otherwise solutions of one to ten or one to five gave good results. A difference of opinion arose between some members as to the efficacy of salt water in the treatment of wounds, one saying that he had seen good results from the use of sea-water, others testifying that healing was retarded by it. These ill results were attributed by M. Houzé to the sand contained in sea-water. Simple solutions of pure salt did not retard healing.

**DR. CHARLES T. PARKES**, in the Chicago Medical Journal and Examiner for October, reports a case of sunstroke with a temperature of  $113^{\circ}$ . The skin was so hot to the touch as to be unpleasant. Ice to the groins, axillæ, neck, and head reduced the temperature to  $99\frac{1}{2}^{\circ}$  in an hour. Recovery rapid.

**STRENGTHENING THE FACULTY.**—To Mrs. and Prof. James W. Holland, M. D., a son, on the 15th of October. To Mrs. and Dr. W. O. Roberts, on the 23d of October, a son, David Yandell Roberts. The mothers and boys are doing excellently, and the fathers are reasonably calm.

## Selections.

**The Treatment of Early Phthisis.**—J. Milner Fothergill, M. D. Edin., M. R. C. P. Lond., Assistant Physician to the Victoria Park Hospital for Diseases of the Chest, in London Practitioner:

The opportunities which are afforded by the out-patient department of a large hospital devoted to diseases of the chest teach some valuable lessons as to the treatment of many thoracic affections. The great prevalence of phthisis attracts attention to it very specially. The number of bright, intelligent workers, both men and girls, that pass before our notice in a twelvemonth, and the number who succumb in that time and are seen no more, give phthisis a grim interest for the physician as well as for the patient.

Before proceeding to discuss the treatment it may be well to define, as exactly as our present knowledge will permit, the malady under discussion. Its leading characteristics are as follows: There is a pneumonic consolidation of one or both apices extending usually to the third rib; but it may extend further, even to the fifth, or it may be localized strictly to the apical tip of the lung. The extent of lung involved is not always the measure of the gravity of the case. That is, while a great extent of lung being involved, or both being implicated, is of bad prognostic omen, the fact that the tip only of one lung is the seat of disease often carries with it no comfort; indeed the worst symptoms are compatible with only a suspicion of localized mischief, and sometimes scarcely even that. The pretubercular stage of phthisis of Laycock—that is, the establishment of marked symptoms before any disease in the lung can be detected—seems borne out by increasing experience; usually, however, before the end of the case local indications manifest themselves, and the disease spreads rapidly throughout the lungs. Whether there is mere chronic pneumonia of the apex, with fairly good pathological products thrown out, or the neoplasm is of such a degraded character that it becomes tuberculous, to use the language of Niemeyer; or it undergoes necrobiotic changes rapidly, and breaks down into debris, leaving a ragged, ulcerated cavity, matters little to the treatment, though it profoundly modifies the prospect to life. In all cases what we have to attempt is to so improve the general nutrition that the pneumonic process shall run a favorable course toward recovery; or, in the other cases, to surround the dead and dying tissue with a wall (the pyogenic membrane) of fairly healthy connective tissue, which will limit the ravages of the lowly tissue-growth of defective vitality, and permit of potential recovery with a cavity or cavities. Such is what we must essay with what success we may. It

is obvious that if any of the neoplastic growth undergoes molecular decay, either by cheesy degeneration or by the formation of an abscess, the effete material must be got rid of by expectoration; and during the softening of the mass, as well as during the time the material is being expectorated, there is hectic fever, and the patient swims for his or her life when recovery is attainable. The treatment of this period entails much attention to the individual peculiarities of each case; but as to the general principles upon which cases of pulmonary phthisis are to be conducted, it is possible to formulate some rules. It is commonly held that the treatment consists of good food containing a fair amount of fat; the administration of tonics, hæmatics, cod-liver oil—the most easily assimilable form of fat; and such palliative measures as the exigencies of the case may require. Quite so. But how to get the system to achieve all this is a matter not always easily settled. To secure this requires attention to some points which may now be considered.

The leading characteristics of early phthisis are cough, emaciation, loss of flesh, night-sweats, and pyrexia, with more or less hemoptysis; each symptom indicating an appropriate line of treatment; for here it is essential to treat symptoms while doing our best to influence favorably the pathological process on which they casually depend. If asked the question, "What do you think the most important matter to attend to in the treatment of early phthisis?" my answer would be, "To arrest the night-sweats." "The next most important?" "To keep the stomach and intestines in good order and attend to the assimilative processes." If these are not attended to, all treatment is futile, or nearly so. If the sweats are not checked, the blood-salts drain out as fast as supplied; if the digestive powers are not cared for, the food taken is not assimilated; and so the patient is no nearer more perfect nutrition and effective tissue-repair.

To arrest night-sweats we must have recourse to some anhydrotic, as oxide of zinc, sulphate of copper, or one of the solanacæ, as hyoscyamus, and still more, belladonna. The first two act as astringents, generally affecting any part where there is an abnormally excessive flux; how, we do not know. Belladonna acts directly upon the secreting nerves of the sudoriparous glands, whether applied locally or administered by the mouth. Probably hyoscyamus acts in an allied manner. Taken altogether, there is no anhydrotic to be compared with belladonna, though in the few cases where it fails the other agents may be tried. But in order to get out the good effects of belladonna, it is necessary to give it in sufficient dose. The ordinary dose of sulphate of atropia—for it is much better to use a solution of atropia of known strength than to give the tincture of bella-

donna, which may and probably usually does vary in strength—is in many cases quite insufficient. The variations of toleration of belladonna in individuals is as pronounced as is the case with Epsom salts; what is sufficient of the latter for one exercises no influence over another person, while the dose some require to produce even a gentle action of the bowels would produce well-marked, nay serious, diarrhea in others. I use atropia in doses varying from the seventy-fifth to the fiftieth, and up to the twenty-fifth of a grain. A considerable proportion of patients are unaffected until the last dose is reached, and even then do not complain of much dryness of throat or indistinctness of vision (effect upon the pupil as a guide to the administration of belladonna is utterly worthless). With many patients the seventy-fifth of a grain of atropia will arrest the night-sweats, and in a certain number will affect the throat and eyesight, while others require the fiftieth to influence the night-sweats; and again a small proportion are uninfluenced until the twenty-fifth is reached. Thus we see the toleration of belladonna varies very much with different individuals. An impression exists in my mind that these large doses of belladonna are more frequently required in the case of Jews than of other patients. The practitioner then must not go away with the impression that belladonna had failed in any case until he has pushed the dose to decided dryness of the throat and distinct impairment of the vision, flinging aside any effect upon the pupil as a fallacious test not to be trusted, for in my experience the pupil is rarely much affected; and yet in other cases a marked effect is occasionally produced on the pupil by placing a small belladonna plaster over the heart. To some other effects of belladonna reference will be made shortly.

The profuse night-sweats of phthisis, and at times of other maladies, are very exhausting. Sweat is a secretion which contains chlorides, phosphates, and sulphates of the alkalies, as well as urea, uric acid, traces of iron and of fat or of fatty acid. Consequently, when the sweat is profuse in a person who is debilitated, it drains the body of its salts, and in doing so cripples the assimilative powers. Usually the first consequence of arresting the night-sweats of the phthisical is the return of the appetite; food is both relished and digested. So long as this drain goes on it is practically useless to give milk, phosphites, meat-juice, etc.; it is like pouring them through a sieve. The importance of checking the night-sweats can not be overrated.

A few words as to the associations of night-sweats may not be out of place or without instructive value. It is well known that ordinarily the night-sweat comes on toward morning—in the deep morning sleep. Often, if the patient keeps awake, the sweats do not come on. On the other hand, where deep sleep is

produced by an opiate given to relieve the cough, profuse night-sweats are commonly the consequence. These associations of night-sweats are significant. They largely depend upon the relations which exist betwixt the pulmonary and the cutaneous respiration, relations much more pronounced in human beings than is generally supposed. Their relations in some of the lower animals are well known. When the respiratory center is depressed in deep sleep, and the pulmonary respiration is lowered very distinctly, the sudoriparous glands are thrown into action. When the blood is deficiently aerated, and there is an excess of carbonic acid in it, the sensory nerves of the sudoriparous glands are thrown into action, and sweating follows (Ott and Field, *Journal of Physiology*, 1878). When then the respiratory center is exhausted by the efforts required to aerate the blood, where the amount of useful lung is limited, and the respiration drops low in deep sleep, sweating, or cutaneous respiration, is the result. Belladonna is a direct stimulant to the respiratory center when failing, either from disease or from a toxic agent, and so is useful in two ways. It arrests the action of the sudoriparous glands on the one hand; and, by stimulating the respiratory center on the other, does away with the necessity for hydrosis. Consequently it is well to give atropia with morphia whenever it becomes necessary to give the latter drug to relieve the night-cough of phthisis. The antagonistic actions of morphia and belladonna are now sufficiently accurately ascertained to enable us to combine them in an intelligent and practically useful manner. Belladonna does not act so powerfully upon the hemispheres as to interfere much with the action of morphia upon them; while its sedative or paralyzant action upon the ends of the vagi (the sensory nerves) in the lungs renders it a useful adjunct to the morphia in arresting cough—a reflex action exerted by the presence of an irritant in the lungs in the form of a neoplastic growth. Not only that, but morphia lowers the activity of the respiratory centers—indeed kills by arresting the respiration, and after it the circulation—while belladonna is a direct stimulant to both. Consequently, even if there be no night-sweats, when it becomes necessary to exhibit opium or morphia for the night-cough of the phthisical, it is well to combine with it a dose of atropine to antagonize the effects upon these rhythmically discharging centers of the respiration and circulation, effects which are unsought and undesirable, yet unavoidable. (For the evidence of these statements the writer must refer the reader to his *Essay on the Antagonism of Therapeutic Agents, and what it Teaches*, 1878.) If there are already night-sweats, the atropia will prevent the opiate making them worse, and often will be found effectual in checking them while not interfering with the desired effects of the opiate. The pill in common use by the writer

at Victoria Park Hospital consists of one fourth of a grain of morphia (hydrochlorate), one fortieth of a grain of atropia, with a grain of capsicum in powder, and three grains of pil aloë et myrrh; at the West London Hospital, of one third of a grain of morphia with one thirtieth of a grain of sulphate of atropia. This pill is well borne in almost all cases. The morphia checks the cough and procures sleep, while the aloëtic vehicle prevents the bowels being locked up and the appetite diminished by the action of the opium upon the local ganglia of the intestinal tube, and on the sensory nerves of the stomach. By such a combination indeed we can secure the desired action of the opiate, and get rid of the effects which are objectionable and detrimental to the patient. So far I have never once seen any of the toxic effects of atropia, as dryness of throat and indistinctness of vision, follow the use of this combination, the morphia apparently combating such manifestations. This use of opium and belladonna together will be found most serviceable in practice.

If belladonna pushed freely does not arrest the night-sweats, an occurrence very rarely encountered, then oxide of zinc with hyoscyamus, or sulphate of copper with opium, may be tried. Dover's powder, conium, quinine, the mineral acids, or tannin, gallic acid, or ergot may be tried. Then comes the question of applications to the skin. Vinegar or a weak solution of a mineral acid may be washed over the surface with advantage. An irregular practitioner in New York many years ago gained a great reputation in the treatment of phthisis by sponging the patient with hot vinegar containing a considerable quantity of powdered capsicum. He was very effective in arresting the night perspirations; and, as usual, when these exhausting sweats are checked, the appetite returns, and food is relished and digested. However attained, if attainable at all, the first thing to be done is to check the night-sweats, and the hot vinegar with cayenne pepper is useful in very obstinate cases.

**Iodine as a Substitute for Quinia.**—Fordyce Grinnell, M. D., Physician to the Wichita Agency, Indian Territory, writes to the Lancet and Clinic:

Malarial diseases were prevailing extensively. I was using quinia at the rate of one ounce per day, and my stock was almost exhausted. I began by giving ten drops of the tincture, in a half glass of sweetened water, three times daily to adults, proportional doses being given to children. *I have been astonished and delighted with the results.*

I have thus treated in all one hundred and thirty-five cases of intermittent fever. These have included children, and in some instances infants in arms. The quotidian and tertian types of the fever were the forms principally presented. I have also treated four cases of diarrhea (malarial) and eight cases of neu-

ralgia (malarial), using the same remedy, only adding astringents or opiates in cases of diarrhea, and narcotics in the neuralgia cases. One hundred and forty-seven cases have thus far been treated with the iodine, and *the results have been fully equal to those treated with the sulphate of quinia.*

In many of these cases the paroxysms did not return after the first dose, though I directed that the remedy should be continued some days after their cessation. In no case so far as reported has it proved an entire failure, but in a few instances the paroxysms have recurred two or three times, necessitating a greater persistence in the use of the remedy.

In those cases accompanied by enlarged spleen I have thought the relief more marked at once than when quinine was used.

The Indians much prefer it to quinia, as it is by far more agreeable to take. This with them, and especially the children, constitutes quite a potent argument in its favor.

The nationality of those treated embraced the white, the Indian, and the negro races. The Indians predominated, though there was a number of each of the other classes treated.

I at once reported the favorable results of this "substitute" to my friend Dr. Irving W. Smith, physician to the Kiowa and Comanche Agency. A note from him of the 14th instant says: "I have tried the new remedy in a number of instances, with both red and white patients, in each instance with complete success so far as known. I have only a few ounces of quinia or cinchonidia, and regard the new remedy as a special blessing at this time. I have added the tincture to simple syrup, a drachm to the ounce, with enough iodide of potassium to prevent precipitation on the addition of water.

**Macroton.**—Detroit Lancet: Macroton, a resinoid obtained from the *cimicifuga racemosa*, is highly recommended for facilitating parturition when taken for a month or two before confinement. It is said to render the labors easier than they otherwise would be. Probably the fluid extract of *cimicifuga racemosa* would fulfill all the indications, unless there should be found another principle that would be contra-indicated.

**Treatment of Onychia Maligna with Nitrate of Lead and Morphia.**—Il Morgagni: Dr. Ceccato Gaetano reports three cases of onychia maligna in which he first applied a strong solution of sulphate of morphia to the diseased finger, and when the sensation was thoroughly dulled, dusted over the part some nitrate of lead in powder. No pain, or only slight pain was experienced. In the course of a few days the crust was removed and a healthy cicatrized surface was left.—*London Practitioner.*